AMENDMENTS TO THE CLAIMS

Claims 1-10 have been canceled.

11.   (New) A re-transmission control method for a transmitting device that transmits a

codeword generated based on a first parity-check matrix to a receiving device, and re-transmits a

k-th additional parity generated based on a k-th parity-check matrix to the receiving device when

receiving a negative acknowledgement for the codeword or a (k-1)-th additional parity, where k

is a positive integer, the re-transmission control method comprising:

transforming a k-th parity-check matrix into an irreducible standard form so that the k-th

parity-check matrix includes a k-th check symbol generator matrix;

generating a (k+1)-th parity-check matrix including the k-th parity-check matrix

transformed in the irreducible standard form;

transforming the (k+1)-th parity-check matrix into the irreducible standard form so that

the (k+1)-th parity-check matrix includes the k-th check symbol generator matrix and a (k+1)-th

check symbol generator matrix;

generating a generator matrix including the k-th check symbol generator matrix and the

(k+1)-th check symbol generator matrix;

generating the k-th additional parity based on the generator matrix; and

transmitting the k-th additional parity to the receiving device.

12.   (New) The re-transmission control method according to claim 11, wherein

the (k+1)-th parity-check matrix is linearly independent,

number of columns of the k-th parity-check matrix is smaller than number of columns of

the (k+1)-th parity-check matrix,

number of rows of the k-th parity-check matrix is smaller than number of rows of the

(k+1)-th parity-check matrix, and

a sum of differences between the Shannon limit and N SNRs each of which

corresponding to each of N parity-check matrices is minimum, where N is a positive integer.

13.   (New) The re-transmission control method according to claim 12, wherein number of

rows and columns to be added to the k-th parity-check matrix to generate the (k+1)-th parity-

check matrix are determined according to system requirement conditions.

14.   (New) The re-transmission control method according to claim 13, wherein a zero matrix

of which number of columns is equal to determined number of columns is added to the k-th

parity-check matrix to generate the (k+1)-th parity-check matrix.

15.   (New) The re-transmission control method according to claim 11, wherein

the negative acknowledgement from the receiving device includes number of errors

corrected by the receiving device, and

the transmission device determines a coding rate based on the number of errors.

16.   (New) A transmitting device that transmits a codeword generated based on a first parity-

check matrix to a receiving device, and re-transmits a k-th additional parity generated based on a

k-th parity-check matrix to the receiving device when receiving a negative acknowledgement for

the codeword or a (k-1)-th additional parity, where k is a positive integer, the transmitting device

comprising:

an encoding unit that includes

a k-th parity-check matrix transforming unit that transforms a k-th parity-check

matrix into an irreducible standard form so that the k-th parity-check matrix includes a k-th

check symbol generator matrix;

a (k+1)-th parity-check matrix generating unit that generates a (k+1)-th parity-

check matrix including the k-th parity-check matrix transformed in the irreducible standard form;

a (k+1)-th parity-check matrix transforming unit that transforms the (k+1)-th

parity-check matrix into the irreducible standard form so that the (k+1)-th parity-check matrix

includes the k-th check symbol generator matrix and a (k+1)-th check symbol generator matrix;

a generator matrix generating unit that generates a generator matrix including the

k-th check symbol generator matrix and the (k+1)-th check symbol generator matrix; and

an additional parity generating unit that generates the k-th additional parity based

on the generator matrix; and

a transmitting unit that transmits the k-th additional parity to the receiving device.

17.   (New) The transmitting device according to claim 16, wherein

the (k+1)-th parity-check matrix is linearly independent,

number of columns of the k-th parity-check matrix is smaller than number of columns of

the (k+1)-th parity-check matrix,

number of rows of the k-th parity-check matrix is smaller than number of rows of the

(k+1)-th parity-check matrix, and

a sum of differences between the Shannon limit and N SNRs each of which

corresponding to each of N parity-check matrices is minimum, where N is a positive integer.

18.   (New) The transmitting device according to claim 17, wherein number of rows and

columns to be added to the k-th parity-check matrix to generate the (k+1)-th parity-check matrix

are determined according to system requirement conditions.

19.   (New) The transmitting device according to claim 18, wherein a zero matrix of which

number of columns is equal to determined number of columns is added to the k-th parity-check

matrix to generate the (k+1)-th parity-check matrix.

20.   (New) The transmitting device according to claim 16, wherein

the negative acknowledgement from the receiving device includes number of errors

corrected by the receiving device, and

the transmission device determines a coding rate based on the number of errors.

21.   (New) A communication device comprising:

a transmitting unit that transmits a codeword coded at a predetermined coding rate to a

receiving device; and

a re-transmitting unit that re-transmits an additional parity to the receiving device.